



From Oceanic to Continental Subduction: Inputs of seismic reflexion profiles transverse to the Luzon - Southern Taiwan

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The Eurasian/Philippine Sea Plates convergence is among the quickest and the activist in the World as it results of an annual average total shortening rate of about 10cm.y⁻¹ (e.g.: Seno et al., 1993; Yu et al. 1997). Effectively a lot more than 18.000 earthquakes per year hits this so active plate boundary whatever their depth and registered magnitudes (Central Weather Bureau of Taiwan, 2004). This active tectonic shortening generates various characteristic and pedagogic offshore and onshore geological structures and their associated reliefs, which evolves both spatially from Luzon (Northern Philippines) to Taiwan (situated in the north) and temporally due to the obliquity of the convergence (see Suppe, 1981).

Fortunately, offshore geophysicists gathered so many high resolution transverse seismic profiles (more than 3000 km long had been acquired in the passed 40 years) with their associated bathymetry, gravimetry, and magnetic datasets that permit us to re-new the previous geologic and geodynamic analyses (e.g.: Ku and Hsu, 2009; Lin et al. 2009).

Herein, we describe, re-analyse this so active plate boundary, and monitor the spatial and temporal structure evolutions with a bird's eye view. Therefore, we re-interpret those, taking into account the tectonic inversion on both sides.

Finally, we propose a new simple thick to thin-skin tectonic model as an explanation for this Eurasian/Philippine plates boundary convergence that may have geodynamic implications on any "Mountain Buildings".